

Natomas Ditch System, Rhodes Ditch
West of Bidwell Street, North of U.S. Hwy. 50
Folsom *View*
Sacramento County
California

HAER
CAL
34-FOLSOM.V,
1B-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

**Historic American Engineering Record
National Park Service
Western Region
Department of the Interior
San Francisco, California 94107**

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HISTORIC AMERICAN ENGINEERING RECORD NATOMAS DITCH SYSTEM, RHODES BRANCH DITCH

HAER No. CA-144-B

Location: The Rhodes Branch of the Natomas Ditch System is located south and slightly east of the City of Folsom, in the eastern section of Sacramento County, California. The ditch leaves the main Natomas Ditch just east of the point where the Southern Pacific Railroad tracks cross East Bidwell Street. From there it loops and curves southward, to just north of Alder Creek, in Section 17; at which point it turns west twisting through Section 18, before heading south along the border between sections 19 and 24, ending just north of Buffalo Creek in Section 24. The ditch within the Area of Potential Effect includes three segments. The main segment is Feature A; it extends south from the main Natomas Ditch, which is located north of the Area of Potential Effect, to Rhodes Diggings a few miles to the south. Feature B conveyed water from Feature A to placer tailings associated with the eastern edge of Prairie Diggings (a distance of approximately a half mile). Feature C extends southwest of Features A and B for a distance of approximately 350 meters out of the Area of Potential Effect; it is visible south of State Route 50 on modern aerial photographs. Feature C diverted water from Feature B around a low hill west to near Prairie Diggings. Within the Area of Potential Effect, the Rhodes Branch of the Natomas Ditch System has the following UTM Zone 10 grid coordinates:

- Feature A:** Northern Point-662840 m Easting, 4280420 m Northing
Dirt Road Intersection-662950 m Easting, 4279970 m Northing
Eastern Point-663250 m Easting, 4279550 m Northing
Southern Point (at State Route 50)-663200 m Easting, 4278640 m Northing
- Feature B:** Western Point-662330 m Easting, 4278760 m Northing
Southern Point-662620 m Easting, 4278690 m Northing
Eastern Point-663130 m Easting, 4278680 m Northing
- Feature C:** Western Point-662520 m Easting, 4278620 m Northing
Approximate Mid-point-662740 m Easting, 4278680 m Northing
Eastern Point-662960 m Easting, 4278760 m Northing

Period of

Construction: Work on the Natomas Ditch system began in June 1852 when an engineer was hired to locate the route. In July the contract to do the work was let and actual construction began about the 1st of August 1852. By October of that year seven miles or about one

half of the canal was complete. Following a delay due to heavy winter rains, the main canal was completed to Mormon Island by May of 1853. This section was ten miles long, but was extended another six miles to the Rhodes Diggings by July of that year. The canal system was continually expanded and improved during the rest of the 1850's and into the 1860's. Another period of extensive modifications and improvements occurred during the first two decades of this century. As a water conveyance device, the ditch was abandoned after the flooding of Folsom Reservoir in the 1950s but continues to be used for local agricultural water collection and storage.

**Present
Owner:**

Presently, ownership of the Natomas Ditch System is divided between state and federal agencies and various private parties. The northern section of the Rhodes Branch Ditch segment is included within an area known as the Broadstone II Master Plan Area, a multiple use project that entails residential and commercial development. The owner of the Area of Potential Effect is the H. C. Elliot Company, Folsom, California. The segment to the north of the Area of Potential Effect and south of Highway 50 is also in private ownership.

Present Use:

Following the completion of Folsom Reservoir, in the early 1950's, which impounded the water of the South Fork of the American River, the system was no longer operational. Sections of the Rhodes Branch Ditch are still intact and fill with water during the winter rainy season. Within the Broadstone 2 Area of Potential Effect the ditch is used for water collection and storage.

Significance:

The Rhodes Branch Ditch was one segment of the much larger Natomas Ditch System. Together they played an important role in the development of mining and agriculture in the Folsom area, which is a significant part of the history of California. While mining and agriculture have been two of the major economic mainstays of California's economy, it was and is water, transported to these industries, that allowed these enterprises to prosper. As one of the earliest and longest lasting commercially successful water conveyance systems in the western United States, the Natomas Ditch and its branches encompass a historic period extending from 1852 through the 1940's. Sections of this system still remain intact, with enough original integrity to allow documentation of large portions of this water system. These portions of the Natomas Ditch System have the potential to be eligible for inclusion in the National Register of Historic Places (NRHP). The ditch system was determined to be eligible for inclusion in the NHRP under Criterion A as a discontinuous district.

In 1993, the State Office of Historic Preservation concluded that this water system meets the requirements to be eligible for inclusion in the National Register of Historic Places, under Criterion A as a discontinuous district at the local level. Based on documentation and other pertinent information that has been researched since then, it is our belief that this system meets these same requirements for state level of significance.

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PART 1. INTRODUCTION

The purpose of this report is to partially mitigate the potential effects of the Broadstone Unit II Master Plan project development on an important section of the Natomas Ditch System known as the Rhodes Branch. This effort is being conducted in compliance with the permit conditions imposed by the U.S. Army Corps of Engineers (Corps), pursuant to Section 404 of the Clean Water Act, Section 106 of the National Historic Preservation Act (NHPA) and a memorandum of agreement between the Corps, the State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation prepared in August 1995.

In compliance with the requirements of the California Environmental Quality Act (CEQA) and section 106 of the NHPA, a number of cultural resources inventories of the Broadstone II Area of Potential Effect (APE) have been undertaken for the City of Folsom. A preliminary report was completed by Derr (1990); additional cultural resource studies were completed by PAR Environmental Services, Inc. (PAR 1992 and 1994); a third cultural resource investigation was completed by ASI Cartography and Geographic Information Systems (ASI 1994).

In 1993, the SHPO concurred that the Natomas Ditch System was eligible for inclusion in the National Register of Historic Places, under Criterion (a) as a discontinuous district at the local level. In reports prepared for the Parkway at Blue Ravine Project by Peak & Associates (1993) and Jones & Stokes Associates (1992 and 1993), a preliminary determination of eligibility for inclusion of this system in the NRHP was completed.

In a report by PAR (1992:72), covering portions of the APE, it was stated that the ditch appears to meet National Register Criteria (a), (b) and (d), and to varying degrees, the integrity requirements as well. The following report focuses on the Rhodes Branch Ditch within the APE and its historic context within the main Natomas Ditch System, and its potential for inclusion in the NRHP under Criterion (a) as part of a discontinuous district at the state level of significance.

PART II. HISTORICAL INFORMATION

Prior to 1848 the area along the South Fork of the American River was largely unknown and untouched by Euro-americans. This riparian habitat, and its many natural resources, had been used extensively by Native Americans for thousands of years. One of the earliest attempts to use the river and its adjacent resources, by non-natives, took place at present day Coloma, where John Augustus Sutter built a mill to process timber harvested in the nearby foothills. The discovery of gold at the mill, in 1848, and the resulting stampede of miners to the area, forever changed the history of California.

The first miners focused their efforts on the readily available and easily obtainable placer gold in and near the rivers and streams that flowed from the Sierra Nevada. These gold deposits were quickly played out and the miners turned their attention to the gold bearing placer deposits in old river courses near the present ones. Numerous methods were employed by the miners to transfer water from the major water courses to work these rich placer deposits. Water was needed to get the maximum yield from the placers as it aided in separating the heavier gold from the lighter rocks and dirt.

Economic pressures, fueled by a rapid reduction in the easily obtainable gold and California's massive population increase in the first few years of the gold boom, caused miners to turn to gold mining methods that were both more difficult and costly. At the end of 1848 California's population of non Native Americans was about 20,000, a modest increase from earlier in the year. By the end of 1849 the population had grown to almost 100,000 and by the end of 1853 it had jumped to 223,860. (Paul 1967:25). Gold production peaked in 1852 at 81 million dollars, dropped to 70 million in 1853 and 1854, dropped to 55 million in 1855 and gradually fell over the next 10 years before leveling off (Paul 1967:345).

It was a combination of these factors that made the building of large scale water projects economically feasible. In central California the primary gold bearing areas are in the foothills of the Sierra Nevada mountain range. There are two major sources of gold in this area, the first is in placer deposits, along present and ancient river courses. The second source is gold-bearing quartz deposits, where the ore is obtained through various types of hard rock mining operations. Both placer and hard rock mining require water to increase the efficiency and production of the gold extraction process.

In central California the only reliable sources of year-round water are the major rivers that flow from the Sierra Nevada. Many smaller rivers and streams that feed these major rivers dry up following the spring run-off and may not flow again until November or December. With a majority of the precipitation falling during the months of December, January and February, even the larger water courses were reduced significantly by late summer. The miners responded quickly in an attempt to overcome this problem; they diverted water from the year-round sources and built small scale water storage and containment facilities in an attempt to provide a continual water supply.

Moving large amounts of water over long distances takes a coordinated effort, professional engineering skills and large amounts of capital. To meet this need water companies were organized. In 1851 Amos Catlin, an attorney, attempted to organize the Natoma Mining Company to bring water from the South Fork of the American River to an area near present day Folsom. This showed considerable foresight for someone only 28 years old, but persistence was also needed to complete this plan (Castenada 1984:38-40).

The original Natoma Mining Company did not survive the year of 1851, due to a lack of sufficient funding. Catlin needed investors who were capable of substantial economic commitments in order to make his idea become reality. To realize this goal Catlin reorganized in late 1851 and changed the name to the Natoma Water Company, the first of many name changes. He reorganized on a larger scale and reached out to better heeled investors with a joint stock company and himself as president. In December of 1851, this new company filed a Notice of Appropriation in Sacramento County and a similar notice in El Dorado County for the water it planned to take from the South Fork of the American River (Castenada 1984; Plimpton 1960).

The reorganized company met on March 3, 1852 and elected officers to run the company for the next 3 months. In mid March they filed another notice of Appropriation with El Dorado County, specifying Rocky Bar, 2 miles above Salmon Falls as the exact location of its diversion dam on the river. This followed an engineering survey early in the year by A. T. Arrowsmith. Augustus T. Arrowsmith, a civil engineer from San Francisco, was one of the first people Catlin hired after reorganizing in late 1851. Arrowsmith was chief engineer for both the dam and the canal, and later became an officer (secretary) of the water company. Bids were solicited for the project and in June of 1852 the bid was awarded to Brooks, Clark & Company of Coloma, to build a dam and 10 miles of canal (Plimpton 1961).

The Natoma Water Company, still strapped for money, paid the contractor part in cash and the rest in future water rents from the canal once they could be realized. The workers, who totaled over 500 during the course of construction, and many of whom were Chinese, were also paid in cash and water scrip. Scrip could be redeemed, after one year, for either cash or water from the canal system. The initial 10 miles of main canal brought water from Rocky Bar to Mormon Island. The second contract, for an additional six miles of branch canal to Willow Springs and beyond cost an additional \$25,000. The cost to the company for these first two sections amounted to \$171,000, and the company is reported to have spent slightly more than \$300,000 to finish the project (Castenada 1984; Plimpton 1961).

Work on the initial 10 miles of canal started on August 1st, this section and the dam was to be completed by November 15th of 1852. Heavy and early winter rains delayed work and destroyed the first dam, located on the American River just above Salmon Falls northeast of Folsom. This first dam had been built of brush and earth fill, it was replaced by a stronger dam composed of timber crib design in roughly the same location. The first section of the Natomas Ditch was completed and water delivered to Mormon Island on May 1, 1853 (Castenada 1984).

The second section of the main Natomas canal was to bring water to Willow Springs, with branches to Prairie City and Rhodes Diggings. The contract for this

work was given to the same construction company in the spring of 1853. The branch canal to Rhodes Diggings was considered more important than the other branch due to the rich placers in the area that had never been worked because of the lack of water. Water from the main Natomas Ditch reached Willow Springs in the summer of 1853 (contract completion for this section was to be July 1, 1853). Plimpton states that a branch canal reached Prairie City near the end of 1853 and Folsom itself in 1854. It may be assumed that a branch of the Natomas Ditch reached Rhodes Diggings sometime after the Willow Springs section was completed but prior to the ditch to Prairie City, due to the importance implied concerning this section. The branch to Prairie City comes off of the Rhodes Branch Ditch, about 2 miles from where it leaves the main canal and flows in a westerly direction. Completion of the ditch to Willow Springs brought new economic life to the area and served as the first headquarters for the Natoma Water Company (Castenada 1984; Plimpton 1961). To summarize, the main Rhodes Branch Ditch (Feature A) extends north south for a linear distance of approximately 4 miles; its physical length would be somewhat longer owing to the many curves and switchbacks in the actual canal. Records of the Natomas Company place the length of the Rhodes Ditch at 7 miles (Silsbee 1955:577). Rhodes Diggings are located approximately 2 miles south of the Broadstone 2 Area of Potential Effect on private property. This area was not subject to study.

The immense scope of this project was brought out in articles from the Sacramento Union during 1852, 1853 and 1854, and quoted by Plimpton and again in Castenada. The project consisted of sixteen miles of main canal and fifty miles of branch ditches. In the first ten miles of the canal there were 6 wooden flumes, with the longest spanning 2196 feet, from a starting point 300 feet below the dam it wound around a steep hill. Another, known as the Crooked Flume, twisted around the steep hillside for 1000 feet between Higgins Point and New York Ravine. The next flume downstream was an engineering feat even by today's standards. Known as the High Flume, it spanned 1791 feet across New York Ravine and was 83 feet above the creek level. Built in three tiers, it supported a water weight of 900 tons and cost the company \$30,000. Each of these flumes measured 4 feet wide by 3 feet deep and along with the rest of the canal dropped at a rate of 4 feet per mile.

The main canal to Willow Springs measured 5 feet wide at the bottom, 8 feet at the top and was 3 feet deep. The branch to the Rhodes Diggings was only slightly smaller, measuring 3 feet wide at the bottom, 7 feet at the top and it was also 3 feet deep. In an effort to conserve as much water as possible and to store local run-off, twelve small reservoirs were built. They also served as an emergency water supply in case of breaks in the main canal. At its peak the canal systems was reported to have served as many as 2,000 miners along its 13 sections.

The water from the canal brought renewed economic life to many areas, in particular to those that had been "dry diggings". In addition to Willow Springs, mentioned above, short lived gold booms occurred at Prairie City, Rhodes Dig-

gings, Mormon Island, Rebel Hill and numerous other areas that are now only historic place names. The city of Folsom, serving as a central supply point to all these areas, received the largest economic windfall as a result of the new water system. A short time later the Natoma Water Company moved its headquarters to Folsom, from its earlier location at Willow Springs (Castaneda 1984).

Following a change in state laws that allowed public corporations for the first time, the Natoma Water Co. incorporated on June 25, 1853. They became the Natoma Water and Mining Company, a joint stock company with a capitalization of \$200,000. A year later, October 13, 1854, the company recapitalized, raising the value of their stock another \$100,000 to \$300,000. This was part of an ongoing effort to raise funds to expand and upgrade the company's water system (Castaneda 1984).

The first few years of operation proved to be quite profitable for the investors in the Natoma Company. During the first year of operation the companies net profit was \$40,000. In July 1853, an article in the Sacramento Pictorial Union noted "the Natoma Water and Mining Company will be one of the most profitable investments in California". In these first years demand for water was high and the company had a near monopoly on water rights along the lower section of the South Fork of the American River. During this period they could charge and get, what were considered to be exorbitant rates for their water (Plimpton 1961).

Water was sold and measured by the miners inch; it equaled the amount of water that would flow through a one inch hole during a 10 hour period, which is approximately 95 cubic feet of water per hour. The Natoma Co. was charging \$3.00 for a miners inch of water, a substantial amount of money in the 1850's when the average daily wage was about half of that. Other water systems operating during this same time period were charging rates in the range of 15 to 20 cents per miners inch for water. This is some indication of the richness of the placers in the areas served by the Natoma water system. The placer gold deposits gradually played out and in response so did the demand for water. As the price and demand for water dropped the company looked for other means and methods of capitalizing on its investment (Plimpton 1964).

Many of the other ditch companies failed to survive following the changes that led to a more capital intensive industrial mining. The Natoma Water Company held on by expanding into agriculture, real estate, its own mining operations and eventually into electrical power and gold dredging. Part of Catlin's original plan had been to use some of the water for agricultural purposes. While most of the water did go to mining purposes, from the beginning some was sold for agriculture, manufacturing and milling. Vineyards and orchards were already established in Sacramento and El Dorado Counties and some of their owners were early customers of the Natoma Company (Castaneda 1984; Plimpton 1961).

The success of the Natoma Company was due in part to its foresight and in part due to efficient management by its principal owners. Catlin retained the

position of president for the first eleven years of operation, at which time he sold his stock in the company. In the course of his employment A. T. Arrowsmith, the company's capable engineer, acquired a large amount of stock in the company. He was responsible for the daily operation of the company, no small task in an operation of this size. The company's ongoing maintenance problems included silt in canals, washed out flumes and broken dams. In addition they faced constant legal challenges to their water rights, thefts of their water and obstructions of in their water system. Maintenance and legal costs begin to eat up a large percentage of the companies profits but they still found ways and means to stay in business.

In 1854 Catlin and some of the other major share holders in the Natoma Water and Mining Co., formed a second company known to history as the American River Water and Mining Company. The purpose of this venture was to divert water from the North Fork of the American River to mines in the area. This venture was plagued with problems from the start as the force and fury of the North Fork constantly destroyed flumes and dams. The principals involved wisely sold their interest in March of 1870. A more successful venture was the acquisition of Rancho de los Americanos, by the parent company in 1857. The company purchased 8654 acres of what had originally been a Spanish land grant to Leidesdoff, from Charles Nystrom. They intended to sell and rent the land to industries, miners and farmers. All these groups would need water, the supply of which would make them dependent on the Natoma Company. The gold boom was starting to slow down and the land did not sell as quickly as planned. The company, rather than have the land just sit there and as a way to stimulate interest in it for agricultural purposes, started their own vineyards and orchards. These crops were watered from their canals and proved to be quite profitable and so the venture was expanded and continued for many years (Plimpton 1961).

Among the Natoma Water Company's stockholders was another ambitious and foresighted individual, Horatio G. Livermore. From 1862 on he began to acquire more stock in the company with the intent of gaining a controlling interest. The declining price of real estate in the early 1860's, along with decreasing profits drove down the value of the company's stock, (by 1868 they were getting only 20 cents for a miners inch of water). These factors allowed Livermore to purchase a controlling interest in the organization for a fraction of what it cost the company originally. By 1864 Livermore had control of the company and placed his two sons, Horatio Putnam and Charles Edward in key positions. Livermore's intent was to switch the focus of the company from mining to the development of water power. This was a more complicated undertaking than Livermore had predicted and in order to pay the bills the orchards and vineyards were expanded and large tracts were planted in hay and grain.

Plimpton notes that by 1885 the Natoma Company had over 2000 acres in vineyards, 300 acres in orchards and over 800 acres in grain and hay. This made it the second largest vineyard in the United States and one of the major agricul-

tural producers in California. The company employed an estimated 100 Chinese and 50 Euro-Americans in this operation. As mining declined the company compensated by continuing to expand its agricultural operations. The company had its own town, Natoma (now Nimbus), in 1893 it had a railroad station, post office, several wineries plus the company shops. At that time 300 men were employed on the fruit packing line alone. They were producing 200,000 gallons of port, 100,000 gallons of brandy, from 7000 tons of table and wine grapes. They shipped 70 to 80 carloads of Tokay grapes plus other fruit to places such as Chicago, St. Louis and New Orleans and were now referred to as the second largest vineyard in the world (Plimpton 1961).

In 1888 the Natoma Water and Mining Company's charter expired and a new company was formed under the name Natoma Vineyards Company, which better reflected present interests. In the next decade, the firm began extensive gold dredging, and from that time through the early 1960s, this method of ore extraction was the sole means of gold mining for the Natomas Company. In the mid-nineteenth century, the firm began selling off some of its land as a means of raising capital, and much of the development south of Folsom is on land formerly owned by the Natomas Company. Interestingly enough, due to a lack of gold values, the land encompassed by the proposed Broadstone 2 Master Plan area was never owned by the Natomas Company. In 1962, the firm ceased gold mining and increased the sale of land in the region. In the early 1980s, the firm was purchased by Magma Power and Light and ceased to exist after more than 130 years of continuous operation under more than a dozen names.

